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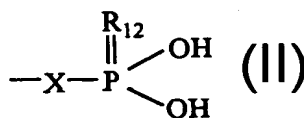
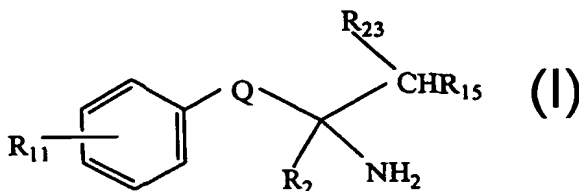
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(88) Date of publication of the international search report:
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COMPOUNDS ACTIVE IN SPINIGOSINE 1-PHOSPHATE SIGNALING



(57) Abstract: The present invention relates to S1P analogs that have activity as S1P receptor modulating agents and the use of such compounds to treat diseases associated with inappropriate S1P receptor activity. The compounds have the general structure of Formula (I) wherein R₁₁ is C₃-C₁₈ alkyl or C₅-C₁₈ alkenyl; Q is selected from the group consisting of C₃-C₆ optionally substituted cycloalkyl, C₃-C₆ optionally substituted heterocyclic, C₃-C₆ optionally substituted aryl, C₃-C₆ optionally substituted heteroaryl and -NH(CO)-; R₂ is selected from the group consisting of H, C₁-C₄ alkyl, (C₁-C₄ alkyl)OH and (C₁-C₄ alkyl)NH₂; R₂₃ is H or C₁-C₄ alkyl, and R₁₅ is selected from the group consisting of hydroxy, phosphonate, and of Formula (II) wherein X and R₁₂ is selected from the group consisting of O and S; or a pharmaceutically acceptable salt or tautomer thereof.

INTERNATIONAL SEARCH REPORT

International application No.

/ 503/23768

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07D 233/54; C07F 9/06; A61K 31/4164

US CL : 548/112, 335.5, 340.1; 514/399

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 548/112, 335.5, 340.1; 514/399

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST; CAS ONLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,069,251(THURKAUF et al) 30 May 2000 (30.05.2000).	1
A	US 4,939,130 (JAEGGI et al) 03 July 1990 (03.07.1990).	1

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

12 April 2004 (12.04.2004)

Date of mailing of the international search report

09 AUG 2004

Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

International application No.

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Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claim Nos.: 2-33
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Please see continuation sheet
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

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Continuation of Box 1 Reason 2:

In these claims, the numerous variables (e.g. W, Y, Z, R11, R16 etc.) and their voluminous complex meanings and their seemingly endless permutations and combinations make it virtually impossible to determine the full scope and complete meaning of the claimed subject matter. As presented, the claimed subject matter cannot be regarded as being a clear and concise description for which protection is sought and as such the listed claims do not comply with the requirements of PCT article 6. Thus it is impossible to carry out a meaningful search on same. A search will be made on the first discernable invention, which is Example 2, encompassing claim 1.